

of uterine tumours of all kinds have passed through my hands; and the advice hitherto given has been to let them alone, either because interference was unnecessary or because their removal was too dangerous. Of course I do not allude to submucous tumours that could be reached by the vagina. I might have removed scores of pedicellated fibroids which, surgically speaking, were very tempting; but in these, nothing but almost absolute safety of operation could have justified interference, and they were all declined, though I was often pressed hard to operate. The melancholy results that have hitherto followed the performance of this operation amongst us forbade interference, even when necessary, under the most favourable circumstances, far more in those dangerous cases of large, quickly growing, soft fibroids or fibro-cysts. Though the greater number of uterine tumours—if not malignant—give little trouble, rarely interfering with life, and often not even with the comfort of the patient, yet in a certain number they cause the subjects of them to lead useless, dependent, miserable lives, full of suffering, ending only with life. I hope the time is not far distant when many of these unfortunates will look to surgery for relief with as much confidence as those afflicted with ovarian disease now do."

68. *Cancer of the Ovary*.—Dr. FOULIS read a paper on this subject before the Medico-Chirurgical Society of Edinburgh, which forms a valuable contribution to the diagnosis of morbid growths. After noticing the researches of Waldeyer on the development of the ova and ovary, he stated shortly his own investigations on the development of the ovary and Graafian follicles.

In the human foetal ovary he had been able to trace that, by the growth of processes of stroma up between the germ epithelial corpuscles, large and small masses of the latter become embedded in the stroma of the ovary in the manner described by Waldeyer. All the embedded corpuscles are potentially ova, though many of them never reach that stage of development. The stroma of a seven months' human foetal ovary consists almost entirely of connective tissue corpuscles. Little processes of the stroma made up of such corpuscles grow in between the embedded ovigerms, and as the latter become conspicuous by their size, the processes thicken between them, and at last each young ovum is gradually shut up in a separate mesh or Graafian follicle. The epithelium of the follicles or tunica granulosa is produced in the following way. As each young ovum becomes inclosed in a mesh of the stroma in the way just described, connective tissue corpuscles in the walls of these primordial follicles lie in close contact with the protoplasm or yolk substance which is produced round the germinal vesicle of each ovum during its development. The nuclei of these connective tissue corpuscles swell up, and by constant division at last produce a perfect capsule round the ovum, consisting of small cells. In all parts of the ovary, wherever germ epithelial cells are developing into ova, connective tissue corpuscles are found lying in close contact with their protoplasm or yolk substance, and the nuclei of these corpuscles swell up, and by constantly dividing, produce the small cells which constitute the follicular epithelium or tunica granulosa of the Graafian follicles. Dr. Foulis thus shows that, while all the ova are derived from the germ epithelium corpuscles, the follicular epithelial cells are part of the stroma, and are derived from connective tissue corpuscles in the stroma of the ovary. At birth the human ovary contains not less than 30,000 Graafian follicles, and the epithelium cells of these are produced by the proliferation of connective tissue corpuscles in the stroma of the organ.

As the result of many investigations which he has made on the development of cystic tumours of the ovary, Dr. Foulis is of the opinion that although, in most cases, over-distension of Graafian follicles is the starting point of cystic tumours of the ovary, when the disease has once started, there is a formation of new cysts in the diseased organ which may go on to an unlimited extent. He has carefully traced the development of small cysts, often found in great numbers in the walls of parent cysts, and he believes that the epithelium of these little cysts is produced by the proliferation of connective tissue corpuscles in a manner very similar to that which takes place in the formation of the epithelium of healthy Graafian follicles. After stating that every cyst, how-

ever small, in the diseased ovary had a distinct epithelial lining, he read the following short notes of two cases of cancer of the ovary to show how important a part is played by the epithelium of cysts in the production of certain forms of malignant disease of the ovary. The first case was that of an Irish lady who consulted Dr. Thomas Keith early in October about a tumour of the abdomen. Dr. Keith, on examination, discovered a semi-solid tumour, larger than an adult head, surrounded by much ascitic fluid. The belly was tapped, and about two gallons of fluid tinged red were drawn off. The sediment from this was carefully examined under the microscope. On placing a drop of it on a glass slide, numerous small white bodies, varying in size from a pin's head to minute specks, were seen with the naked eye; these under the microscope were found to be little masses of epithelial cells and nuclei, proliferating in an extraordinary manner; epithelial cells in all stages of development were projecting from the little masses. From the close resemblance of these cells to the cells of epithelium lining young cysts of an ovarian tumour, Dr. Foulis thought the little masses were fragments of epithelium which had escaped from small burst cysts, and, floating free in the ascitic fluid, were proliferating. The patient improved much after the tapping, and ovariectomy was performed. A fungous mass the size of an egg was found growing from the wall of the pelvis on the right side, and the tumour itself was one large malignant mass. Some small burst cysts were found on the surface of the tumour, and many small cysts unbroken, and filled with large epithelial cells, were found in different parts of the tumour. In some of the cysts the epithelium was much thickened and projected in papilliform growths.

The second case was that of a woman about thirty years of age, who in September consulted Dr. Thomas Keith about a tumour in the abdomen. Dr. Keith discovered a large cystic tumour of the ovary, surrounded by a considerable quantity of ascitic fluid. The patient's right pleural cavity was filled with fluid. Dr. Keith first tapped the abdomen, and three days after this drew off from the right chest 127 oz. of serum. A microscopic examination of the ascitic fluid showed a large quantity of cells and free nuclei from the cysts of the ovarian tumour. On the 3d October, Dr. Keith again drew off from the abdomen 32 lbs. of fluid. The deposit from this was carefully examined. With the naked eye many small white bodies were seen, and these under the microscope were found to be little masses of proliferating epithelium, similar to those found in the Irish lady's case. On the 27th November the abdomen was again tapped, and the fluid emptied into a large foot-pan. In the course of a couple of hours the deposit was an inch thick, and, without exaggeration, half of the deposit consisted of these little masses of sprouting epithelium, they had increased so enormously in quantity! At this time, patient was remarkably well in health, and on being asked as to the state of her health, always replied cheerfully, "Oh, I feel quite well!" She showed no signs externally of internal malignant disease. From the experience we had gained by the Irish lady's case, Dr. Keith made up his mind that this was not a case for operation. The patient soon went home to Perth, and on 28th December died suddenly. Through the great kindness of Dr. Absolom, of Perth, who performed a most careful examination of the body, I received an account of the condition of the abdomen, and also the whole tumour. The peritoneal surface everywhere was studded with small white nodules of a malignant nature. The tumour weighed about 12 lbs., and was of the right ovary. The Fallopian tube was drawn out to the extent of 14 inches along one side of it. The mass was made up of a number of cystic growths, varying in size from a marble to a foetal head, all fused together and presenting various degrees of solidity. In all the cysts the epithelial lining was enormously thickened, in some cases to the extent of an inch and a half. The internal surface of each cyst was rough like a cauliflower growth. In the centre of the tumour was a semi-solid malignant mass the size of a child's head. In every part the tumour was found to be of a malignant nature. In bringing these two cases before the Society, the object Dr. Foulis had was to direct attention to the little masses of sprouting epithelium found in ascitic fluid surrounding a tumour in the abdomen, as a means of diagnosing malignant ovarian tumour and malignant peritonitis. Dr. Foulis has no doubt that the malignant

disease in both these cases originated in the ovary, and that the malignant condition of other parts in the abdominal cavity was caused by the dissemination of elements from the primary seat of the disease upon neighbouring parts. In the second case, it was not possible to say from the external signs that the patient was suffering from internal disease of so grave a character; and yet after death at least 10 lbs. of cancerous material was found in her abdomen. No doubt, a malignant ovarian tumour may be present in the abdomen without the presence of these little masses of sprouting epithelium in ascitic fluid, but where ascitic fluid is present, and these little bodies are found in it floating free and growing at a rapid rate, quite independently of surrounding structures, Dr. Foulis considers them to be a certain sign of malignant ovarian tumour and peritonitis.—*Ed. Med. Journ.*, March, 1875.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

69. *Poisoning by Chloral*.—An interesting case of poisoning by chloral hydrate is reported in the *Centralblatt f. d. Med. Wissenschaften*, of 3d April, 1875, as follows: A man who had taken 24 grammes (about 370 grains) of chloral hydrate was found half an hour after in a deep sleep, no more dangerous manifestations of its effects having yet developed themselves. About half an hour later, however, he began to suffer from interrupted respiration, the heart remaining normally active. Subsequently the heart's impulse became dangerously feeble, so that the pulse could only be felt in the carotid, while the face became deadly pale. The pupils were greatly contracted, and the temperature sank to $32^{\circ}.9$ ($91^{\circ}.22$ F.). Artificial respiration by means of passive motion and faradization being followed by no improvement, 0.003 grm. of strychnia was injected subcutaneously. Muscular spasm set in immediately, rapidly followed by trismus, the heart's impulse became again perceptible, the pupils enlarged, and the temperature rose to $33^{\circ}.3$ ($91^{\circ}.94$ F.). Dangerous symptoms manifesting themselves again shortly after, a second injection of 0.002 of strychnia was administered, the effects of which displayed themselves as before; the heart increased in power and the temperature rose to normal. Respiration, however, had to be excited for eight hours longer by means of the induction current. Thirty-two hours after the intoxication he awoke fresh and free from all effects, having been easily wakened on several occasions from his deep sleep for some time previously. The trismus and tetanic contractions of the muscles of the upper extremity persisted for fourteen hours after the second injection of strychnia. No gastritis followed this enormous dose of chloral, perhaps because it had been taken on a full stomach.—*Irish. Hosp. Gazette*, May 15, 1875.